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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,911	06/14/2006	Thomas Domschke	12810-00268-US1	4575
23416 7590 09/06/2007 CONNOLLY BOVE LODGE & HUTZ, LLP P O BOX 2207 WILMINGTON, DE 19899			EXAMINER GALE, KELLETTE	
			ART UNIT 1621	PAPER NUMBER
			MAIL DATE 09/06/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/582,911	<b>Applicant(s)</b> DOMSCHKE ET AL.	
	<b>Examiner</b> Kellette Gale	<b>Art Unit</b> 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>June 14, 2006</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Domschke et al (US 2006/0058550) in view of Veits et al (US 5,744,634).

Applicant claims a method for the production of C1-C10-alkyl 2-keto-L-gulonates by esterification of 2-keto-L-gulonic acid anhydrate with an anhydrous C1-C10-alkyl alcohol in the presence of an acidic homogeneous catalyst in a reaction cascade comprising at least two reactors, one reactor being a tubular reactor, wherein water forming in the esterification is not removed in the reaction cascade.

**Determination of the scope and content of the prior art**

**(MPEP §2141.01)**

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Domschke et al teaches an invention that relates to a method for producing 2-keto-L-gulonic acid-C4-C10 alkyl ester by esterifying 2-keto-L-gulonic acid (KGA) with an unsaturated branched or unbranched C4-C10 alcohol. There are two reactors being used and in one embodiment the preliminary esterification is carried out without removing water (please see paragraph [0048]). A suitable homogeneous catalyst is stated to be sulfuric acid (please see paragraph [0026]).

Veits et al teaches a process for the manufacture of methyl or ethyl 2-keto-L-gulonate.

#### **Ascertainment of the difference between the prior art and the claims**

##### **(MPEP §2141.02)**

The difference between Domschke et al and the claims is that Domschke et al does not teach the exact products as outlined in the claims. Domschke et al does not teach the use of 2-keto-L-gulonic acid anhydrate and anhydrous alcohol. Also, process condition may not be exactly the same.

#### **Finding of prima facie obviousness**

##### **Rational and Motivation (MPEP §2142-2143)**

It would be obvious for one of ordinary skill in the art at the time of the instant invention to prepare the compounds as outlined in the claims as the process as taught by Domschke et al is the same as that which is outlined in the claims. One having ordinary skill in the art at the time of the instant invention would be motivated to do so as the products are important intermediates in the preparation of ascorbic acid and Veits et al has taught a similar process for the manufacture of the same products.

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It would be obvious for one having ordinary skill in the art at the time of the instant invention to use the anhydrate of 2-keto-L-gulonic acid and of alcohol as it would reduce the amount of water formed during the reaction. One of ordinary skill in the art at the time of the instant invention would be motivated to use the anhydrates in order to prevent the need to remove water from the reaction. Not removing water is simply admitting an unnecessary step. Also, although no specific concentrations are recited, merely modifying the process conditions such as temperature and concentration is not a patentable modification absent a showing of criticality. In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kellette Gale whose telephone number is (571) 272-8038. The examiner can normally be reached on M-F (6:30am-3:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, YVONNE EYLER can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

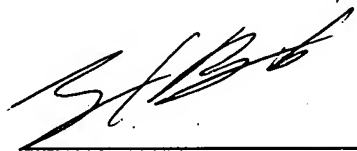
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Kellette Gale  
Patent Examiner  
Technology Center 1600

**August 28, 2007**



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Samuel Barts  
Primary Patent Examiner  
Technology Center 1600